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| Novak Druce + Quigg, LLP 1300 Eye Street, NW, Suite 1000 Suite 1000, West Tower Washington, DC 20005 | | | EXAMINER LAVILLA, MICHAEL E | |
| | | | ART UNIT 1794 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/560,935 | Applicant(s) JUNKERS ET AL. | |
| | Examiner MICHAEL LAVILLA | Art Unit 1794 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 17-22 and 38-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 23-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20051215</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, Claims 1-16 and 23-37, in the reply filed on 23 November 2009 is acknowledged. The traversal is on the ground(s) that search of both claim groups can be made without a serious burden. This is not found persuasive because the claim groups are separately classified, which is prima facie evidence that the appropriate search required for each claim group is non-coextensive and so the search and examination of both claim groups would constitute a serious burden.
2. The requirement is still deemed proper and is therefore made FINAL.
3. Claims 17-22 and 38-41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 23 November 2009.

Claim Objections

4. Claims 25, 26, 28, and 34 are objected to because of the following informalities: Regarding Claims 25 and 26, these claims are missing final periods. Regarding Claim 28, line 2, the phrase "on one side of the metal band", as opposed to the same phrase bridging lines 2 and 3, appears to be superfluous and should be deleted. Regarding Claim 34, last line, two occurrences, the abbreviation for "micron" should be " μm ". Appropriate correction is required.

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5. Claims 11, 16, 29, 30, 36, and 37 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Regarding Claim 11, 16, 29, 30, 36, and 37, since the metal band or strip is described as having copper/tin coating layer, it may not be properly further limiting when the metal band or strip is said to "consist" of steel, mild steel, or mild steel having a composition, etc.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:
7. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
8. Claims 11, 16, 23, 29, 30, 33, 36, and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
9. Regarding Claim 11, 16, 29, 30, 36, and 37, it is unclear what is the antecedent basis of the phrase "the metal band" or "the metal strip". Is reference being made to the preamble of the respective claimed products or to the substrate on which the described copper/tin coatings of the respective previous claims are disposed?
10. Regarding Claim 23, it is unclear what is the antecedent basis of the phrase "the steel band" since previous Claim 1 makes no mention of a "steel band".

11. Regarding Claim 33, it is unclear what is meant by the phrase "having a thickness of on one side". It is unclear what claimed thickness is being claimed.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 1-4, 12-14, 16, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferenczy et al. USPN 5,553,640 in view of Furutoku et al. JP 10-202391. Ferenczy et al. teaches forming double-walled steel tubes from metal bands that have been coated with Cu/Sn alloy brazing layer on both sides, wherein the thickness on one side is 4 to 6 microns and the thickness is 0.5 to 1.5 microns on the other side. Ferenczy et al. teaches that the copper layer material melting temperature can be maintained below maximum values for favorable performance. See Ferenczy et al. (Figures 1-4; col. 1, lines 5-24; col.

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2, line 30 through col. 4, line 40). Ferenczy et al. does not teach a Cu/Sn alloy having 3 to 12 weight percent tin. Furutoku et al. teaches a copper/tin alloy braze composition that is favored for its low melting temperature and low expense due to absence of silver, wherein the amount of tin can be 7.9 weight percent. See Furutoku et al (paragraphs 8-39). It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the band of Ferenczy et al. with the copper braze alloy of Furutoku in place of that used by Ferenczy et al. in order to minimize expense and to avoid high brazing temperatures. Regarding Claims 32-34, Ferenczy et al. may not exemplify the claimed thicknesses of each of these claims for the respective Cu/Sn layers, but suggests a range for one layer that includes 1 micron and a range for the other layer that includes 4 microns, among other thicknesses. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention to prepare bands having layer thicknesses as claimed since Ferenczy et al. suggests that effective bands for making double-walled tubes can be made in this manner. Regarding Claims 12-14, 16 and 31-34, the claimed "metal strip" can be viewed as encompassing the bands of Ferenczy since there is no dimension specified for the strip that necessarily precludes these bands from being encompassed by the claimed "metal strip."

15. Claims 7-9, 11, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferenczy et al. USPN 5,553,640 in view of Furutoku et al. JP 10-202391 in further view of Usai USPN 4,223,826. Ferenczy et al. in view of

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Furutoku et al. is relied upon as set forth above in the section 103 rejection of Claims 1-4, 12-14, 16, and 31-34. Ferenczy et al. in view of Furutoku may not teach that the band has the claimed width of 20 to 80 mm. However Usai teaches that a suitable width for a steel band being used to make a double-walled tube is 46 mm. See Usai (col. 2, line 55 through col. 3, line 17). It would have been obvious to one of ordinary skill in the art at the time of the invention to prepare the steel bands of Ferenczy et al in view of Furutoku with band widths as suggested by Usai since Usai suggests that these band widths are effective for making double-walled tubes.

16. Claims 5 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferenczy et al. USPN 5,553,640 in view of Furutoku et al. JP 10-202391 in further view of Anderson et al. USPN 3,610,290. Ferenczy et al. in view of Furutoku et al. is relied upon as set forth above in the section 103 rejection of Claims 1-4, 12-14, 16, and 31-34. Ferenczy et al. in view of Furutoku may not teach that the steel substrate is a mild steel material, although Ferenczy et al. teaches that the substrate may be made of steel as opposed to stainless steel and that these double-walled tubes are used to make brake tubings. Anderson et al. teaches that brake tubing double-walled steel substrate materials are conventionally made of mild steel. See Anderson et al. (col. 1, lines 3-32). It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the substrate of Ferenczy et al. in view of Furutoku et al.

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with a mild steel material since Anderson et al. teaches that conventionally such substrates being used for brake tubings are made from mild steel material.

17. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ferenczy et al. USPN 5,553,640 in view of Furutoku et al. JP 10-202391 in further view of Anderson et al. USPN 3,610,290 in further view of Usai USPN 4,223,826. Ferenczy et al. in view of Furutoku et al. in further view of Anderson is relied upon as set forth above. Ferenczy et al. in view of Furutoku in further view of Anderson et al. may not teach that the band has the claimed width of 20 to 80 mm. However Usai teaches that a suitable width for a steel band being used to make a fine diameter double-walled tube is 46 mm. See Usai (col. 2, line 55 through col. 3, line 17). It would have been obvious to one of ordinary skill in the art at the time of the invention to prepare the steel bands of Ferenczy et al in view of Furutoku in further view of Anderson et al. with band widths as suggested by Usai since Usai suggests that these band widths are effective for making fine diameter double-walled tubes.

18. Claims 23 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ferenczy et al. USPN 5,553,640 in view of Furutoku et al. JP 10-202391 in further view of Anderson et al. USPN 3,610,290 in further view of Hirano et al. USPN 4,127,427. Ferenczy et al. in view of Furutoku et al. in further view of Anderson et al. is relied upon as set forth above. Ferenczy et al. in view of Furutoku in further view of Anderson may not teach that the steel substrate is of the claimed mild steel material composition. Hirano teaches claimed mild steel

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material compositions for steel strips that are used for automotive applications.

See Hirano et al. (Abstract; col. 2, line 66 through col. 3, line 29; and Table 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the substrate of Ferenczy et al. in view of Furutoku et al. in further view of Anderson with a mild steel material compositions of Hirano since the substrate should be of a mild steel suitable for automotive applications and since Hirano et al. teaches that the composition of the steel of Hirano meets these requirements.

19. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ferenczy et al. USPN 5,553,640 in view of Furutoku et al. JP 10-202391 in further view of Anderson et al. USPN 3,610,290 in further view of Hirano et al. USPN 4,127,427 in further view of Usai USPN 4,223,826. Ferenczy et al. in view of Furutoku et al. in further view of Anderson in further view of Hirano is relied upon as set forth above. Ferenczy et al. in view of Furutoku in further view of Anderson et al. in further view of Hirano may not teach that the band has the claimed width of 20 to 80 mm. However Usai teaches that a suitable width for a steel band being used to make a fine diameter double-walled tube is 46 mm. See Usai (col. 2, line 55 through col. 3, line 17). It would have been obvious to one of ordinary skill in the art at the time of the invention to prepare the steel bands of Ferenczy et al in view of Furutoku in further view of Anderson et al. in further view of Hirano with band widths as suggested by Usai since Usai

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suggests that these band widths are effective for making fine diameter double-walled tubes.

20. Claims 6, 15, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goff EP 0 546790 in view of Furutoku et al. JP 10-202391. Goff et al. teaches forming double-walled steel tubes from metal bands that have been coated with Cu brazing layer on one side and Ni layer on the other side, wherein the Cu layer thickness on one side is 3 microns and the thickness of Ni is 3 microns on the other side for corrosion protection. See Goff (page 2, line 25 through page 3, line 34). Goff does not teach a Cu/Sn alloy having 3 to 12 weight percent tin. Furutoku et al. teaches a copper/tin alloy braze composition that is favored for its low melting temperature and low expense due to absence of silver, wherein the amount of tin can be 7.9 weight percent. See Furutoku et al (paragraphs 8-39). It would have been obvious to one of ordinary skill in the art at the time of the invention to fabricate the band of Goff with the copper braze alloy of Furutoku in place of that used by Goff in order to minimize expense and to avoid high brazing temperatures. Regarding Claims 28 and 35, Goff may not teach that the nickel layer has the claimed thickness of 0.5 to 2 microns, but Goff does exemplify 3 microns and does teach that the nickel is applied to regulate corrosion protection. It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the layer thickness to thicknesses in the vicinity of 3 microns, including to thicknesses as low as approximately 2 microns,

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in order to balance corrosion protection with amount of deposited material.

Regarding Claim 35, the claimed "metal strip" can be viewed as encompassing the strip of Goff since there is no dimension specified for the claimed strip that necessarily precludes Goff's strips from being encompassed by the claimed "metal strip."

21. Claims 10 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goff EP 0 546790 in view of Furutoku et al. JP 10-202391 in further view of Usai USPN 4,223,826. Goff et al. in view of Furutoku is relied upon as above in the section 103 rejection of Claims 6, 15 and 35. Goff in view of Furutoku may not teach that the band has the claimed width of 20 to 80 mm. However Usai teaches that a suitable width for a steel band being used to make a fine diameter double-walled tube is 46 mm. See Usai (col. 2, line 55 through col. 3, line 17). It would have been obvious to one of ordinary skill in the art at the time of the invention to prepare the steel bands of Goff in view of Furutoku with band widths as suggested by Usai since Usai suggests that these band widths are effective for making fine diameter double-walled tubes.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL LAVILLA whose telephone number is (571)272-1539. The examiner can normally be reached on Monday through Friday.

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23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil, can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/Michael La Villa/
Michael La Villa
Primary Patent Examiner, Art Unit 1794
3 December 2009**